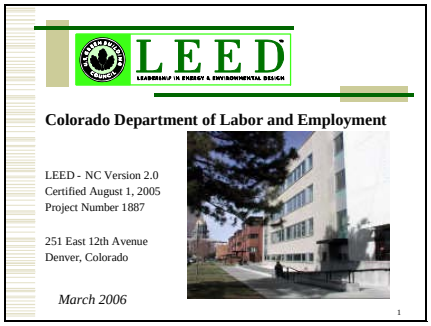
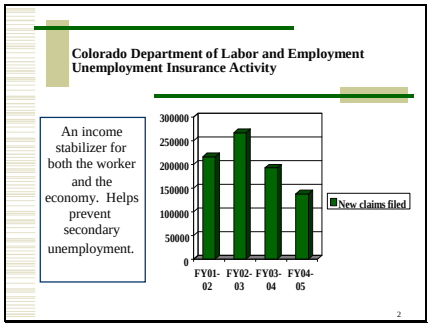
Slide 1



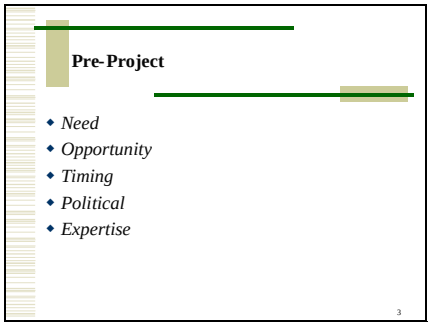
The Colorado Department of Labor and Employment (CDLE) LEED-certified project is the addition (darker block exterior) on this 1956 building located near the state capitol. The project is the first state building to be certified in Colorado and only the 15th LEED-certified project in the state overall.

Slide 2



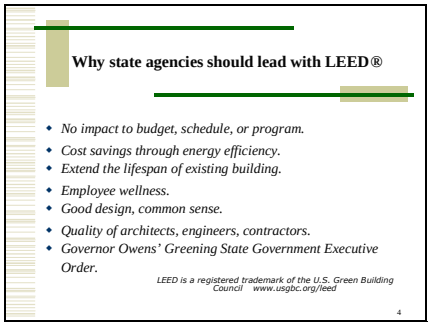
Unemployment peaked in 2002, as a result of the events of 9-11-2001. At the peak, we paid out over a half-billion dollars in unemployment benefits in one year. With the average weekly unemployment claim paying about $300 per week, that's a lot of people out of work.

Slide 3



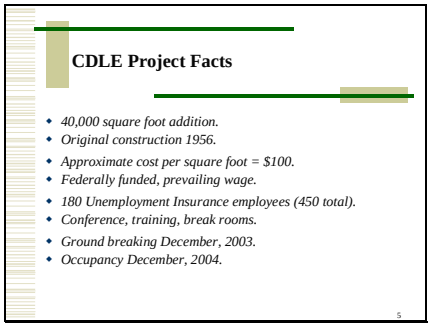
Need – Unemployment Insurance (UI) staff were located in two buildings – the project site and downtown at 1515 Arapahoe. As part of a business reengineering project, it was necessary to collocate staff.
Opportunity – In March 2002, the federal government provided states with a special allocation of funds, providing the money necessary for the project.
Timing – The 1515 Arapahoe lease expired in early 2005, allowing us just enough time to complete the project and relocate staff. The CM/GC (construction management / general contractor) contract was signed in August, 2003. We moved in December, 2004.
Political – Although the administrative costs for the UI program are 100% federally funded, the allocation of those funds must be made by the Colorado General Assembly and approved by the governor.
Expertise – The State Buildings / Real Estate Programs group in the Department of Personnel and Administration provide expertise to state agencies engaged in a construction project. Lance Shepherd and Larry Friedberg provided architectural, code review, and LEED expertise. During the RFP process, Lance contacted Linda Smith, Sr. Program Manager, at the Governor's Office of Energy Management and Conservation (OEMC), to inquire about the availability of energy-performance grants. Linda arranged for a $25,000 LEED design grant. CDLE project management team included Mike Schnarr, Director of Facilities, and Angie Fyfe, representing the UI program.

Slide 4



CDLE management agreed to pursue LEED certification only if the result was no impact to budget, schedule, or program. A high-performance building appealed to management because of the potential cost savings, ability to extend the lifespan of our existing facility (One thought was to sell the Capitol Hill building and buy a newer building in Interlocken. Instead, management decided to "recycle" our existing facility.) Employee wellness was considered, especially since the new construction was going on just on the other side of the wall from our staff. We felt the LEED principles / elements represented good design principles and were just good, common sense. We feel that architects, engineers, and contractors with LEED experience are "cutting edge." The governor's executive order, signed in July 2005, concerning greening state government directs state agencies to adopt LEED-EB for maintenance and operation of state buildings, and LEED-NC to design energy and resource efficient new buildings, to the extent cost effective. In our experience, LEED is cost effective.

Slide 5



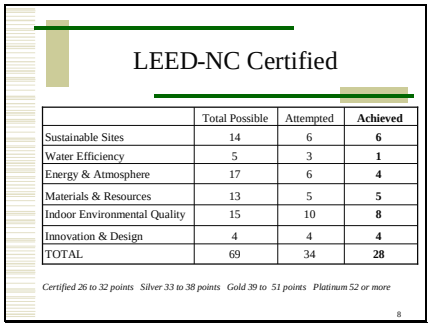
While adding 40,000 square feet to a 50-year-old building, one of our concerns was that the result would be an "old" building and a "new" building. By using the same LEED-design elements and materials in the renovated interior spaces, it is virtually impossible to tell the difference between the old and the new. $100 per square foot construction costs is good by most any standard. It is even more impressive when you consider that because the project was federally funded, Davis-Bacon (or prevailing) wages were paid. The result was a ten to 25 percent increase in labor costs. The addition contains open office space and a few private offices for about 180 employees, as well as conference, training, and break rooms. There are about 450 UI program employees in the building in total. Construction was completed in approximately one years time.

Slide 6

Slide 7

The CDLE project was LEED "certified" for new construction. There are four LEED levels, with points assigned in six categories. LEED stands for Leadership in Energy and Environmental Design. LEED certification is awarded by the U.S. Green Building Council, a non-profit organization. The council is "a coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work."

Slide 8



LEED-NC Certified

	Total Possible	Attempted	**Achieved**
Sustainable Sites	14	6	**6**
Water Efficiency	5	3	**1**
Energy & Atmosphere	17	6	**4**
Materials & Resources	13	5	**5**
Indoor Environmental Quality	15	10	**8**
Innovation & Design	4	4	**4**
TOTAL	69	34	**28**

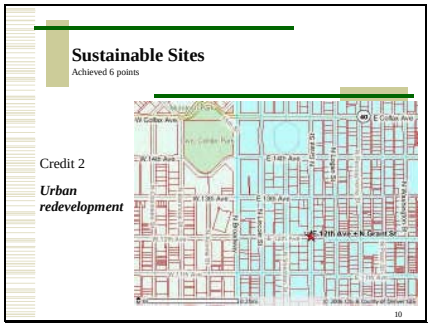
Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more

8

Slide 9

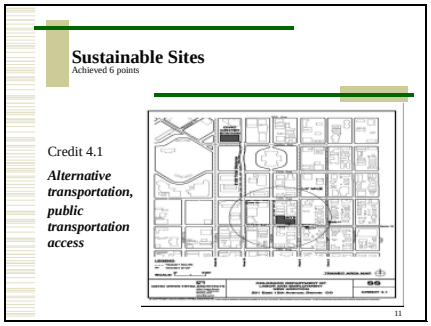
This presentation addresses the credits awarded in the CDLE submittal. The four of the six categories contain prerequisites, which are not addressed in this presentation.
Credit 1 - The condemned parking garage was a mess. It had become a dumping ground for surplus state property. It smelled and was home to lots of rodents.

Slide 10



The site is obviously in an urban area with high density.

Slide 11



No parking is provided to CDLE employees, however the site is located on two bus routes and just blocks from downtown Denver's transportation hub.

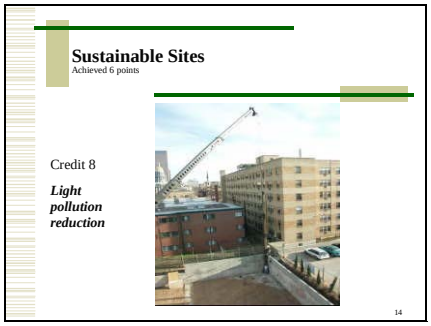
Slide 12

This is the Grant Street service drive at high noon on the summer solstice. 56% of the site's non-roof impervious surfaces will be shaded within five years. The parking lot in the left-hand side of the photo belongs to the adjacent apartment building.

Slide 13

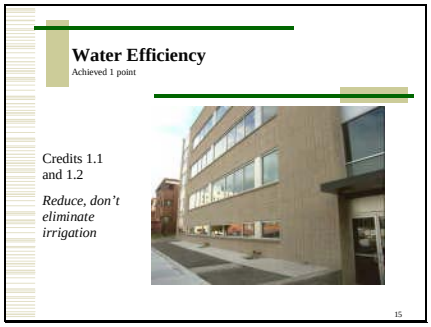
Our roof-top view of the state capitol. 88.6% of the project's roof surface is covered with roofing that meets emissivity and reflectivity requirements.

Slide 14



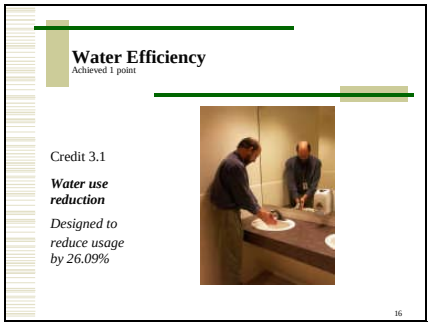
The credit's intent is to eliminate light trespass from the building site, improve night sky access, and reduce development impact on nocturnal environments.

Slide 15



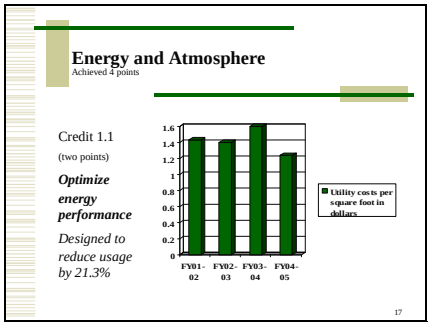
A lesson learned for other project managers. We thought we were exceeding the credit's requirements (reduce potable water consumption for irrigation by 50%) by eliminating irrigation. We were wrong. The reviewer's comments indicate that the credit intent is to reduce irrigation, thereby implying the landscape would have irrigation needs. Eliminating planting in its entirety does not meet the intent of the credit.

Slide 16



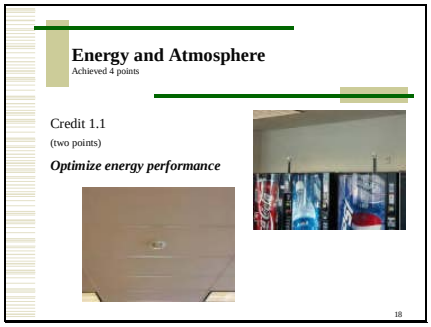
We used low-flow lavatory faucets (0.5 gallons per minute (gpm)) and low-flow kitchen faucets 1.8 gpm.

Slide 17



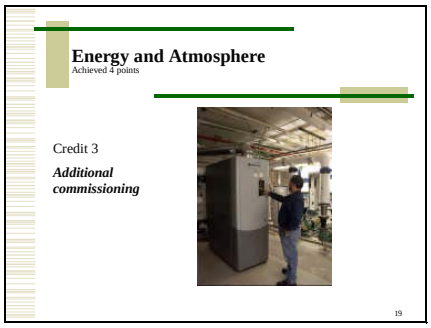
This chart represents utility costs (we don't have usage figures) for state fiscal years (July 1 – June 30) 2002-2005. During FY 04-05 we added 40,000 square feet of space, employees and equipment, yet our utility costs decreased about 20%. Utility costs represented here are water, sewer, natural gas, and electric.

Slide 18



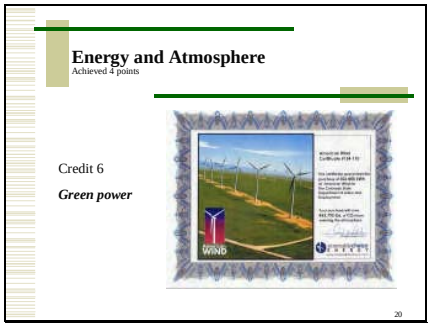
Although not a part of the LEED submittal, a handy gadget available from the Governor's Office of Energy Management and Conservation, the sensors on top of the beverage vending machines are motion sensitive. The machine will go into a low-use mode when there is no activity near the machine, thus reducing the amount of energy used.
The sensor in the ceiling tile in the photo on the left is part of our Watt-Stopper lighting system. It is also a motion detector, which will turn off the lights when there has been no movement in the area for 60 minutes. This is especially important in non-occupied rooms such as closets and storage rooms.

Slide 19



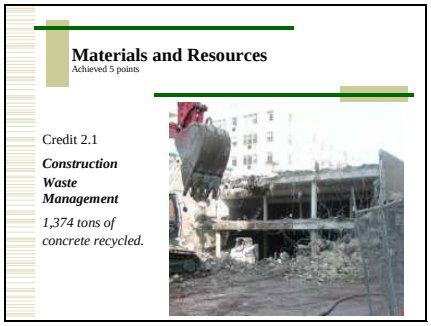
The additional commissioning will provide CDLE a seasonal commissioning, a post occupancy (ten month) review and a systems and energy manual for ongoing facility maintenance. Pictured here is our staff HVAC technician. This boiler was installed in the original part of the building as part of the performance contracting work. Performance contracting provides new energy-efficient equipment, such as boilers and windows and pays for them with savings from utility bills.

Slide 20



Impact of using 50% American Wind™ equals 445,440 pounds of CO_2 That's equivalent to not driving 486,288 miles…Or effectively taking 39 cars off of the road. It would take 61 acres of trees to soak up this much CO_2!
The building still uses electricity from its local utility, which delivers energy from the grid from a mixture of sources. By buying Renewable Energy Certificates for the project, we are ensuring that the energy that gets put back onto the grid on your behalf comes from new, clean sources – like wind.

Slide 21

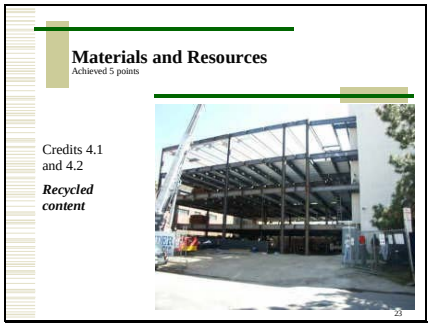


In terms of watching the construction, this was the staff's favorite part. We managed to recycle 1,374 tons of concrete from the garage structure.

Slide 22

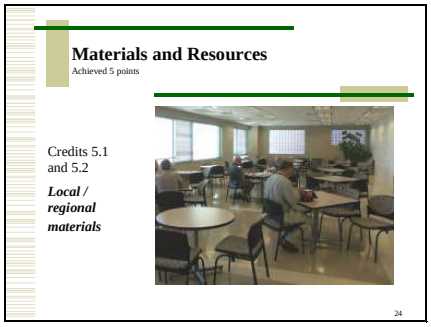
Construction sites are cluttered with construction waste. Our general contractor, Hyder Inc., indicated that sorting the waste into recyclable and non-recyclable materials actually helped to keep the site cleaner.

Slide 23



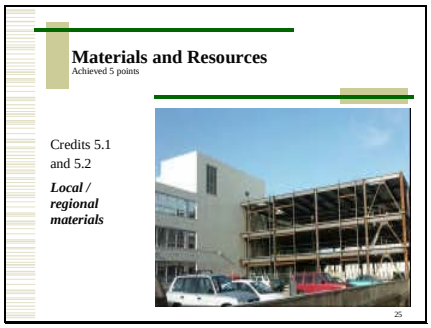
The project's recycled content included steel and other metal products.

Slide 24



33.76% of the total project's materials, based on cost, were manufactured within a 500 mile radius of the project site.
11% of the total project's materials, based on cost, were manufactured using raw materials harvested within a 500 mile radius of the project site.

Slide 25



The west side of the project. Most of the local / regional materials were steel products.

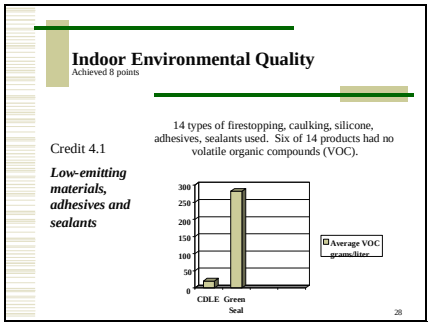
Slide 26

The building now has a permanent carbon dioxide monitoring system.

Slide 27

After construction and prior to occupancy, we conducted a three-week building flush with new Minimum Efficiency Reporting Value (MERV) filtration media at 100% outside air. Our staff commented that there was no "new building" smell when we moved in.

Slide 28

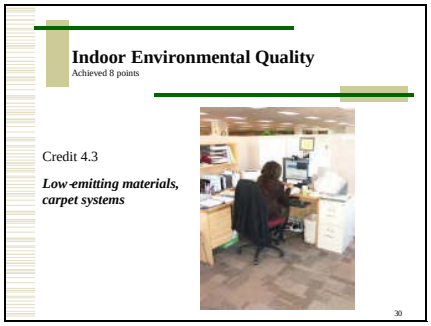


Green Seal (www.greenseal.org) is a non-profit organization that reviews and rates products that cause less pollution and toxic waste. The average Green Seal standard for VOC content in adhesives is greater than 250 VOC g/L. The adhesives and sealants used in the CDLE project averaged less than 20 VOC g/L.

Slide 29

The painter's putty, primer, and paint contained no VOCs.

Slide 30

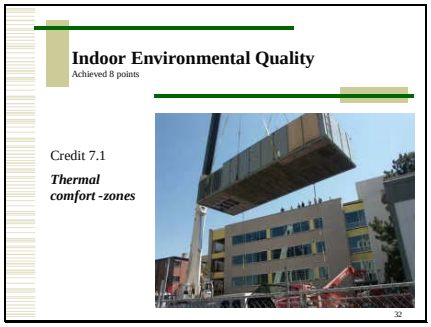


Using carpet tiles in lieu of broadloom will save us on replacement cost and save the environment in terms of waste. This is an Interface carpet product, which we have been very happy with.

Slide 31

This is our staff entrance on Sherman Street. Providing something as simple as a recessed walk-off mat controls the amount of pollutants in the building. Capturing the dirt at the door creates better indoor air quality.

Slide 32



The director of of program, Mike Cullen, said early on in the project that as a part of his legacy, he wanted to ensure that the building infrastructure was state-of-the art, after 50 years of band-aids on the original HVAC system. The result was far fewer complaints from staff concerning their comfort in the space.

Slide 33

By far the greatest visible impact to staff is the infusion of light. The skylight and atrium area, shown on the left, brings daylight to the center of the building. The glass walls in the conference rooms, shown on the right, allows that light to penetrate that space as well.

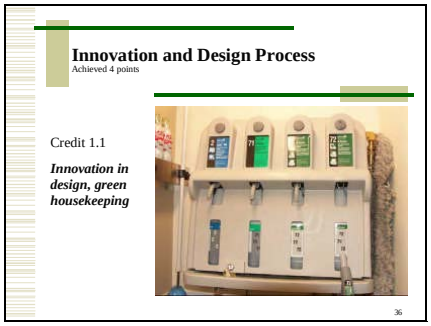
Slide 34

These photos show our core customer call center, where staff spend 40 hours a week taking unemployment claims. This is an example of how we carried a LEED principle (daylight and views) into our renovated space.

Slide 35

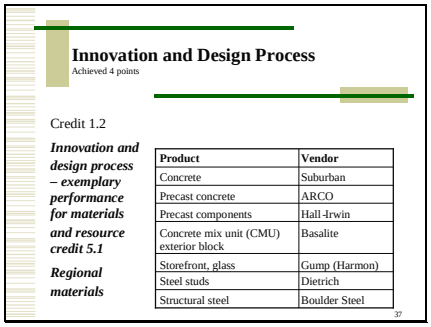
We purposely located private offices at the interior of the space and provided the staff with the best daylight and views.

Slide 36



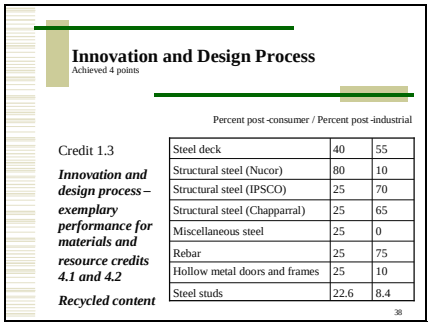
Our Green Housekeeping policy is essentially a environmentally-preferred purchasing policy for building maintenance products. Our maintenance staff are our employees, thus we are especially concerned about their wellness. Using green products protects their health as well as the health of the building occupants.

Slide 37



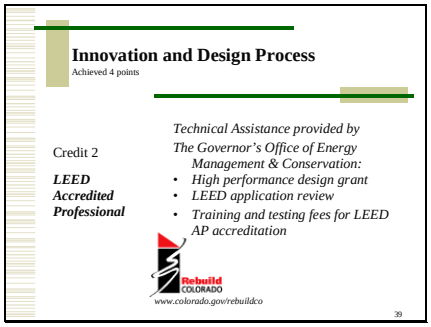
The exemplary performance credit in this area would not have been possible without the dedicated documentation completed by Hyder Construction.

Slide 38



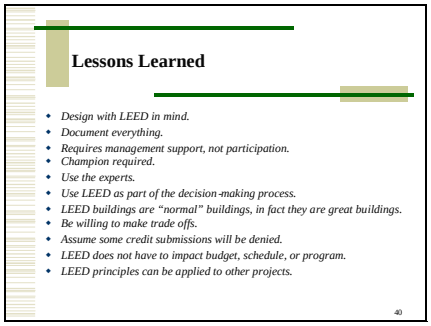
The combined value of post-consumer content plus one-half the post-industrial content is 26.78 percent. This is more than double the credit's threshold of ten percent.

Slide 39



Thank you, OEMC, for providing support through the $25,000 design grant and a $3,000 grant for LEED application pre-submittal review.

Slide 40



A quote from Chris Nims, principal architect with David Owen Tryba Architects: "There are decisions that have to be made before pencil ever touches paper, decisions that will affect how you design the building and the materials you select. Every component, every guideline, every mark of the pen must be done with consideration of the environmental implications."
Once we had management approval, we kept the project somewhat "below the radar." We only went to management with a LEED-related item if it meant a trade off with something else. For example, instead of granite flooring in the staff entry, we used ceramic tile. The savings was plowed back into LEED related items.
We did discuss the wind-power purchase with management, because of the political implications. (Why is the state using taxpayer dollars to purchase renewable energy?)
To be successful, LEED projects need a champion, someone in the organization that cares about this on a personal level.
Experts are available, sometimes for free (OEMC) – so take advantage of their knowledge.
Sometimes high-performance buildings are thought of as high tech and possible "strange." There is nothing strange about this building, in fact it is a great environment to work in.
Submit every for every credit you think you possibly have a shot at obtaining, knowing that some may be denied.
LEED certification is attainable within your set budget and schedule. As an owner, you don't have to be a LEED expert or an architect or an engineer to be successful in providing your organization with a healthy, sustainable building.

Slide 41

Without the dedication of the architects, engineers, and contractors, this project would not have been possible. Our thanks to all of them!

Slide 42